

Appl. No. 09/924,016  
Amdt. dated January 23, 2004  
Reply to Office action of October 31, 2003

### **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listing of claims in this application:

Listing of claims:

1. (currently amended) A silicoaluminophosphate molecular sieve comprising at least one intergrown phase of molecular sieves having AEI and CHA frameworks ~~framework~~ types, wherein said intergrown phase has an AEI/CHA ratio of from about 5/95 to 40/60 as determined by DIFFaX analysis and having at least one reflection peak in the 17.7 to 18.1 (2 $\theta$ ) range, using the powder X-ray diffraction pattern of a calcined sample of said silicoaluminophosphate molecular sieve.
2. (original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 7/93 to 38/62.
3. (original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 8/92 to 35/65.
4. (original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 9/91 to 33/67.
5. (currently amended) The silicoaluminophosphate molecular sieve of claim 1 wherein the molecular sieve having CHA framework ~~type~~ is SAPO-34.
6. (currently amended) The silicoaluminophosphate molecular sieve of claim 1 wherein th molecular sieve having AEI framework ~~type~~ is SAPO-18, ALPO-18 or a mixture of SAPO-18 and ALPO-18.

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7. (original) The silicoaluminophosphate molecular sieve of claim 1 wherein said silicoaluminophosphate molecular sieve has an X-ray diffraction pattern having at least one reflection peak in each of the following ranges in the 5 to 25 ( $2\theta$ ) range:

$2\theta$ (CuK $\alpha$ )
9.3 - 9.6
12.7 - 13.0
13.8 - 14.0
15.9 - 16.1
17.7 - 18.1
18.9 - 19.1
20.5 - 20.7
23.7 - 24.0

8. (currently amended) The silicoaluminophosphate molecular sieve of claim 7 wherein the X-ray diffraction pattern has no reflection peak in the 9.8 to 12.0 ( $2\theta$ ) range and has no broad feature centered at about 16.9 ( $2\theta$ ).
9. (currently amended) The silicoaluminophosphate molecular sieve of claim 7 wherein the reflection peak in the 17.7 - 18.1 ( $2\theta$ ) range has a relative intensity between 0.09 and 0.40 with respect to the reflection peak at 17.9 ( $2\theta$ ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 ( $2\theta$ ) range.
10. (original) The silicoaluminophosphate molecular sieve of claim 9 wherein the reflection peak in the 17.7 - 18.1 ( $2\theta$ ) range has a relative intensity

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between 0.10 and 0.35 with respect to the reflection peak at 17.9 (2 $\theta$ ) in the diffraction pattern of SAPO-34,

- 11.(original) The silicoaluminophosphate molecular sieve of claim 1 wherein the silica to alumina ratio ranges from 0.01 to 0.25.
- 12.(original) The silicoaluminophosphate molecular sieve of claim 11 wherein the silica to alumina ratio ranges from 0.02 to 0.20.
- 13.(original) The silicoaluminophosphate molecular sieve of claim 11 wherein the silica to alumina ratio ranges from 0.03 to 0.19.
- 14.(original) The silicoaluminophosphate molecular sieve of claim 1, wherein the molecular sieve is comprised of crystalline plates, platelets or stacked platelets.
- 15.(original) A catalyst comprising the silicoaluminophosphate molecular sieve of claim 1 and a binder.
- 16.(currently amended) A process for making an olefin product from an oxygenate feedstock comprising contacting said oxygenate feedstock with a catalyst comprising a silicoaluminophosphate molecular sieve comprising at least one intergrown phase of molecular sieves having AEI and CHA frameworks ~~framework~~-types, wherein said intergrown phase has an AEI/CHA ratio of from about 5/95 to 40/60 as determined by DIFFaX analysis and has at least one reflection peak in the 17.7 to 18.1 (2 $\theta$ ) range, using the powder X-ray diffraction pattern of a calcined sample of said silicoaluminophosphate molecular sieve, under conditions effective to form an olefin product.

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17. (currently amended) The process of claim 16, wherein the oxygenate is selected from the group consisting of methanol; ethanol; n-propanol; isopropanol; C<sub>4</sub> - C<sub>20</sub> alcohols; methyl ethyl ether; dimethyl ether; diethyl ether; di-isopropyl ether; formaldehyde; dimethyl carbonate; dimethyl ketone; acetic acid; and mixtures thereof.
18. (currently amended) The process of claim 16, wherein the oxygenate is selected from the group consisting of methanol, dimethyl ether, and mixtures thereof.
19. (original) The process of claim 16, wherein the oxygenate is methanol.
20. (original) The process of claim 16, wherein the selectivity to ethylene and propylene is equal to or greater than 75.0%.
21. (original) The process of claim 20, wherein the ethylene to propylene ratio is equal to or greater than 0.75.
22. (original) The process of claim 20, wherein the selectivity to propane is equal to or lower than 1.0%.
23. (original) The process of claim 16, wherein the selectivity to propane is equal to or smaller than 1.0%.

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24. (original) A silicoaluminophosphate molecular sieve exhibiting an X-ray diffraction pattern having at least one reflection peak in each of the following ranges in the 5 to 25 (2 $\theta$ ) range:

2 $\theta$ (CuK $\alpha$ )
9.3 - 9.6
12.7 - 13.0
13.8 - 14.0
15.9 - 16.1
17.7 - 18.1
18.9 - 19.1
20.5 - 20.7
23.7 - 24.0

and having no reflection peak in the 9.8 to 12.0 (2 $\theta$ ) range and no broad feature centered at about 16.9 (2 $\theta$ ).

25. (original) The silicoaluminophosphate molecular sieve of claim 24, wherein the reflection peak in the 17.7 - 18.1 (2 $\theta$ ) range has a relative intensity between 0.09 and 0.40 with respect to the reflection peak at 17.9 (2 $\theta$ ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 (2 $\theta$ ) range.

26. (original) The silicoaluminophosphate molecular sieve of claim 24, wherein the reflection peak in the 17.7 - 18.1 (2 $\theta$ ) range has a relative intensity between 0.10 and 0.35 with respect to the reflection peak at 17.9 (2 $\theta$ ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 (2 $\theta$ ) range.

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- 27.(original) The silicoaluminophosphate molecular sieve of claim 24,  
wherein the silica to alumina ratio ranges from 0.01 to 0.25.
28. (original) The silicoaluminophosphate molecular sieve of claim 24,  
wherein the silica to alumina ratio ranges from 0.02 to 0.20.
- 29.(original) The silicoaluminophosphate molecular sieve of claim 24,  
wherein the silica to alumina ratio ranges from 0.03 to 0.19.
- 30.(original) The silicoaluminophosphate molecular sieve of claim 24,  
wherein the molecular sieve is comprised of crystalline plates, platelets or  
stacked platelets.
- 31.(original) A catalyst comprising the silicoaluminophosphate molecular  
sieve of claim 24 and a binder.